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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Styrsystem		FOR FURTHER ACTION See Form PCT/IPEA/416
International application No. PCT/SE2003/001219	International filing date (day/month/year) 16.07.2003	Priority date (day/month/year) 07.08.2002
International Patent Classification (IPC) or national classification and IPC H04L 12/66, H04L 12/26, H04L 29/06		
Applicant Kvaser Consultant AB et al		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 12.12.2003	Date of completion of this report 04.11.2004
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/BE2003/001219

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 11 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 1 - 3 _____ received by this Authority on 18.08.2004
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1 - 5 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-10</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-10</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-10</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)**Cited documents:**

D1: "Bluetooth in automotive diagnostics" Fredriksson L-B

D2: EP, A2, 1197396

D3: WO, A1, 9833129

D1 relates to a system where the network uses a protocol and the tool uses another protocol (this is also disclosed in D2). D3 discloses a system where a PDA receives complicated analyses made by a computer when requested by the PDA.

The cited documents represent the general state of the art. The invention defined in claims 1-10 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed arrangement of communicating with different protocols using obtained information between units and dividing analysis between the units. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-10 is novel and is considered to involve an inventive step. The invention is industrially applicable.

CLAIMS

1. Arrangement for analysing, simulating and/or monitoring functions and/or structures in a distributed control system
5 (24) that works with a first protocol (29), characterized in that a first unit (23, 26) is connected or can be connected to the control system via contacts (5', 6', 6''), which first unit by means of the first protocol receives and/or sends task instructions concerning the functions
10 and/or structures, in that the first unit is connected to a second unit (22), in that the second unit in turn is connected or can be connected either to a tool arrangement interactable with a user and comprising a computer equipment (21) adapted with large capacity in order to be
15 able to carry out sophisticated calculation, simulation and/or analysis tasks, or to a PDA unit or corresponding unit connected or connectable to a computer equipment adapted to configure the PDA unit or the corresponding unit, which PDA unit or corresponding unit is adapted to
20 carry out more limited tasks of the mentioned kind, in that the first unit transforms at least those parts in the first protocol (29) that relate to said tasks into a second protocol (28), by means of which the tasks or parts of tasks can be transformed to the second unit (22), in that
25 the second unit by means of the second protocol or a third protocol (27) can communicate with the tool arrangement, which at readings and/or modifications in the first protocol and in the first and second protocols, respectively, treats the same with readings and/or
30 modifications in the second and third protocols, respectively, in that the first unit (23 or 26) comprises at least one microprocessor which communicates partly with

the control system by means of connection, protocol and bit speed valid for the control system, partly with the second unit (22), and in that the second unit is equipped with at least one microprocessor, as well, by means of which
5 microprocessor the second unit is adapted to exchange information with the first unit and the tool arrangement.

2. Arrangement according to claim 1, characterized in that the second protocol is developed specially to serve as a
10 common platform for the analysis of two or more systems with different or the first protocol, respectively.

3. Arrangement according to the claim 1 or 2, characterized in that the second unit provides a common
15 time base for first units (23) working in parallel.

4. Arrangement according to any of claims 1-2, characterized in that the first unit or first units (23) are arranged for independent collection, processing and
20 saving of information from the connected system and in that the information generated in this way is arranged to be able to be read and/or interpreted via the generated information via the second unit (22).

25 5. Arrangement according to any of claims 1-4, characterized in that second parts of task instructions downloaded or transferred from the computer equipment (21) can be allocated to a number of technicians for use of PDA units in different systems.

30 6. Arrangement according to any one of the preceding claims, characterized in that in the interaction between

the computer equipment and the user, rules are generated for automatic repetition, and in that the rules can be modified for a PDA unit with regard to the collected information and the presentation of the analysis result.

5

7. Arrangement according to any of claims 1-6, characterized in that the tool arrangement is adapted with a connection arrangement adapted to communicate with one or more microprocessors via serial or wireless communication,
10 for example USB, Ethernet, etc.

8. Arrangement according to any of the proceeding claims 1-7, characterized in that the first or second unit is adapted to communicate via a serial communication, for
15 example CAN or LIN, in one direction and with a microprocessor (4) via a serial communication, for example CAN, USB, etc. towards the other direction and to work with reduced interface, for example light diod(-s), summer, etc., toward user(-s).

20

9. Arrangement according to any of the claims 1-7, characterized in that the first or second unit communicates with one or more units via a serial communication by means of a microprocessor and works with reduced interface toward
25 a user(-s), carries out processing of signals from another unit according to rules attained from another unit, and comprises a number of units having microprocessors which communicate with serial communication.

30 10. Arrangement according to claim 9, characterized in that the units comprise a local clock which respectively is adjusted or related to a clock in another unit.